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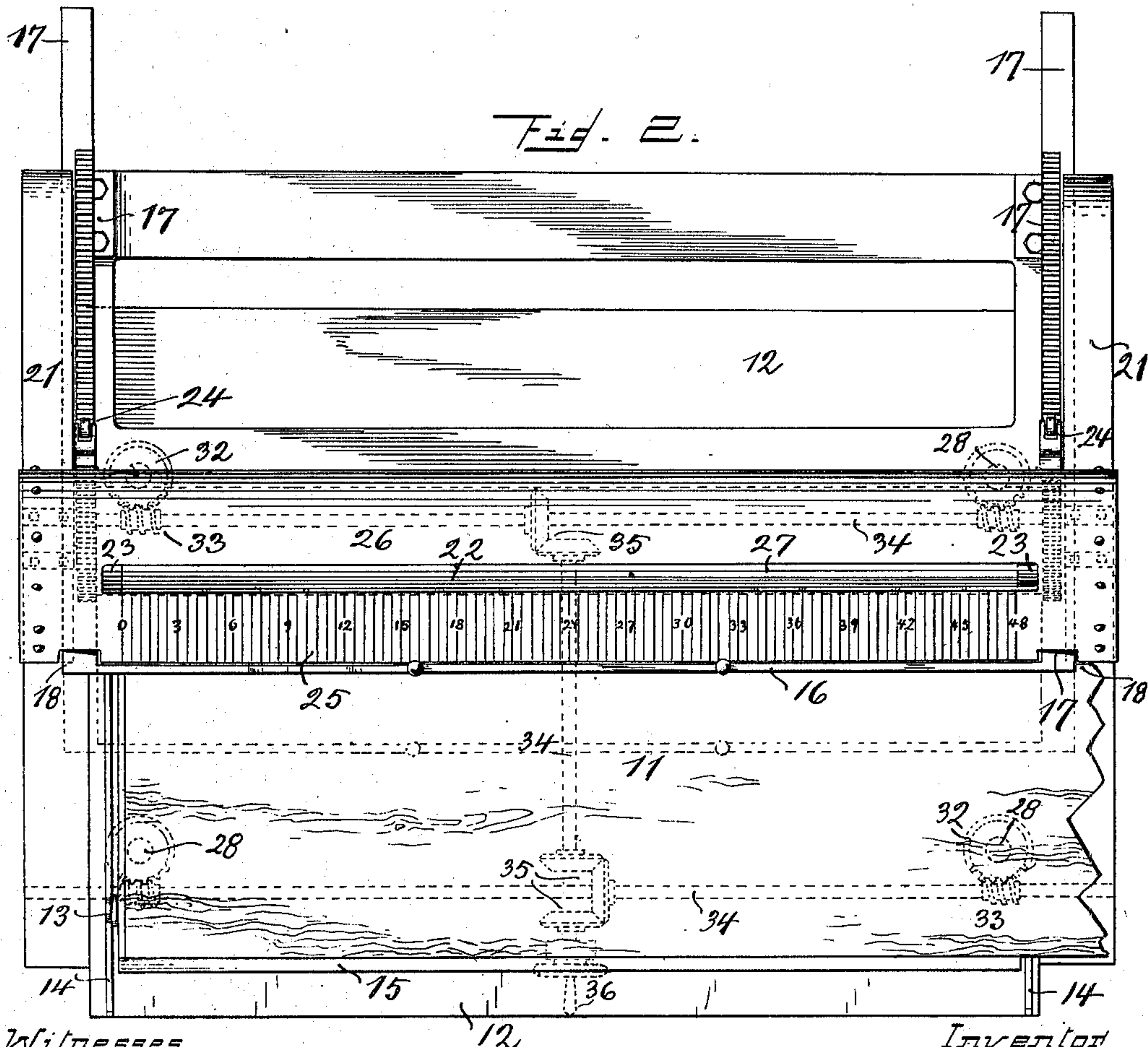
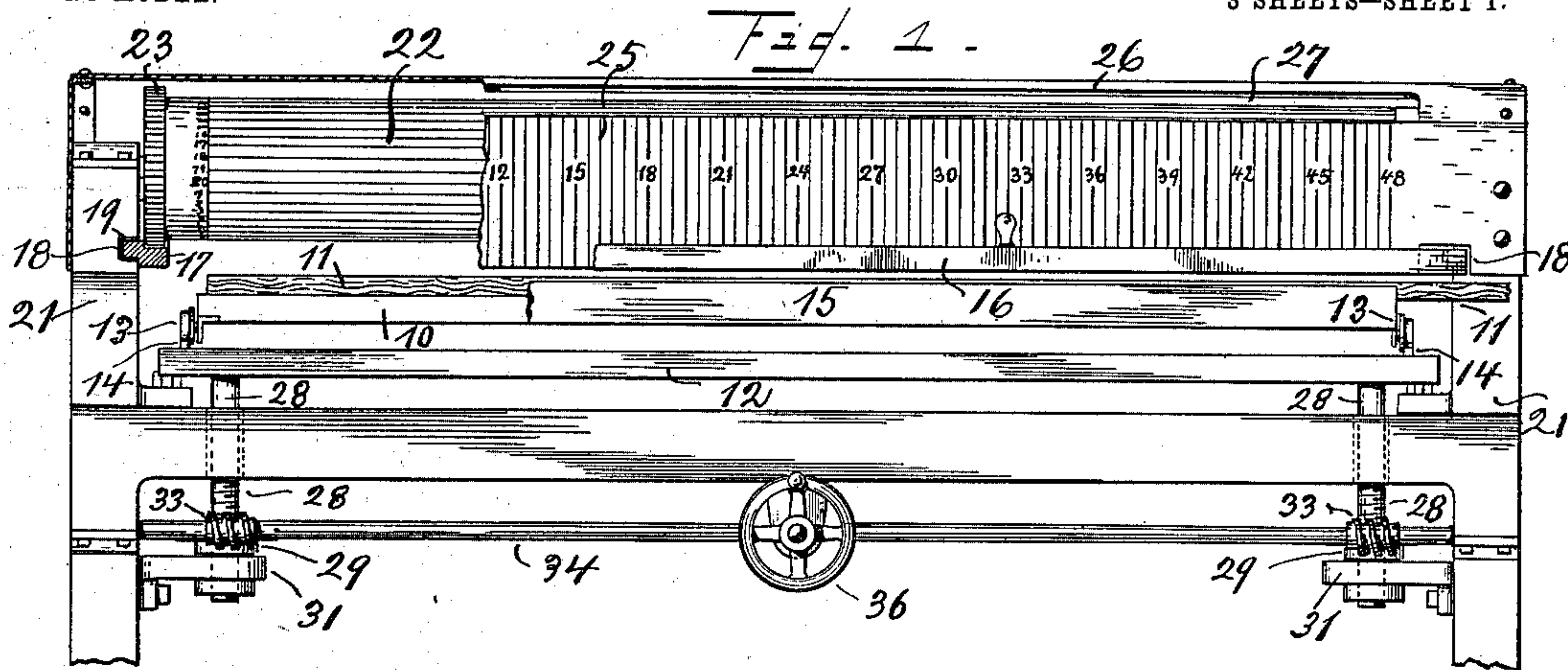
PATENTED JULY 28, 1903.

E. M. SCHANTZ.  
MARKING MACHINE.

APPLICATION FILED FEB. 24, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses

Edward F. Smith.  
Arthur Kline

Inventor

Edwin M. Schantz  
by C. Spengel atty.

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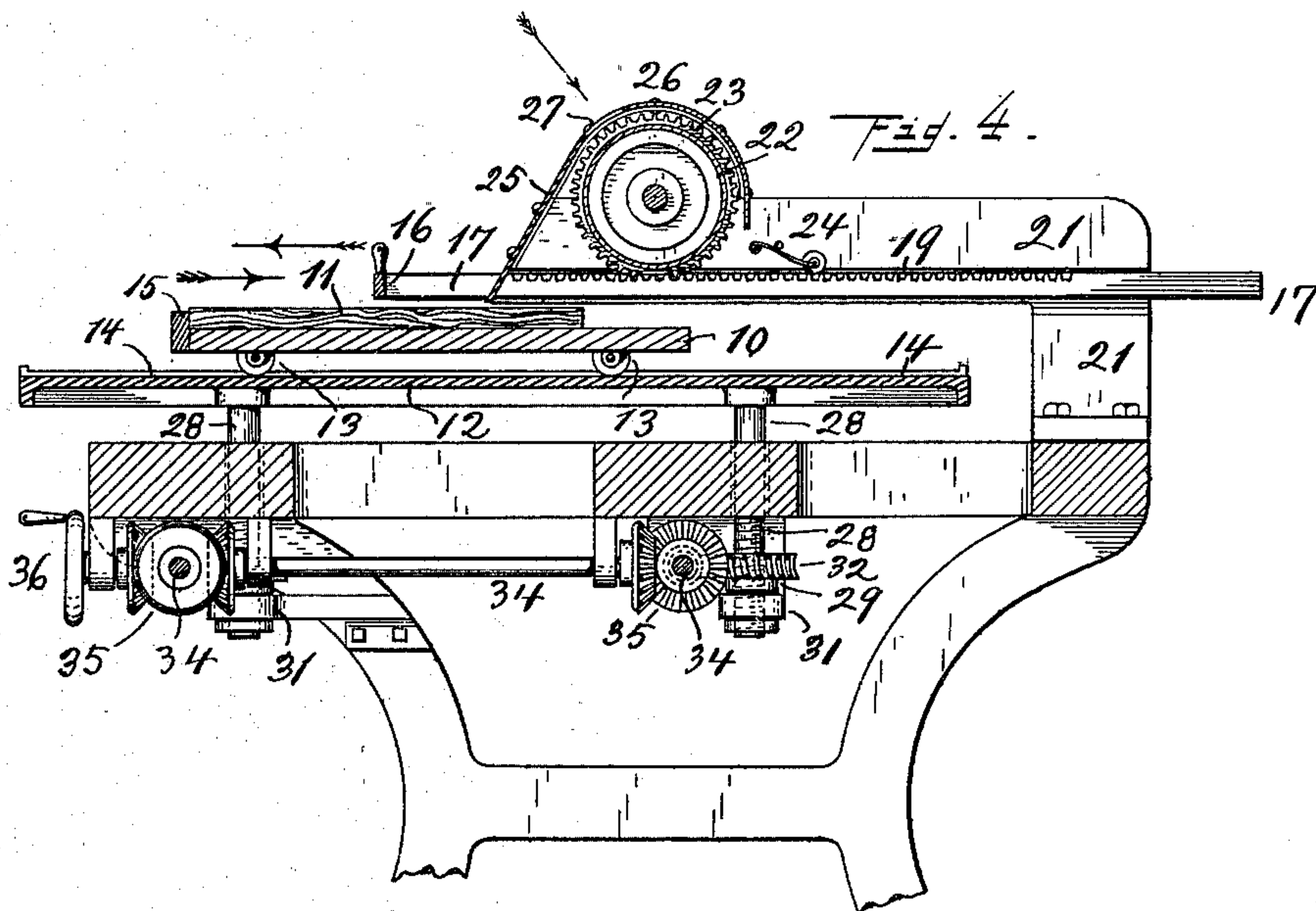
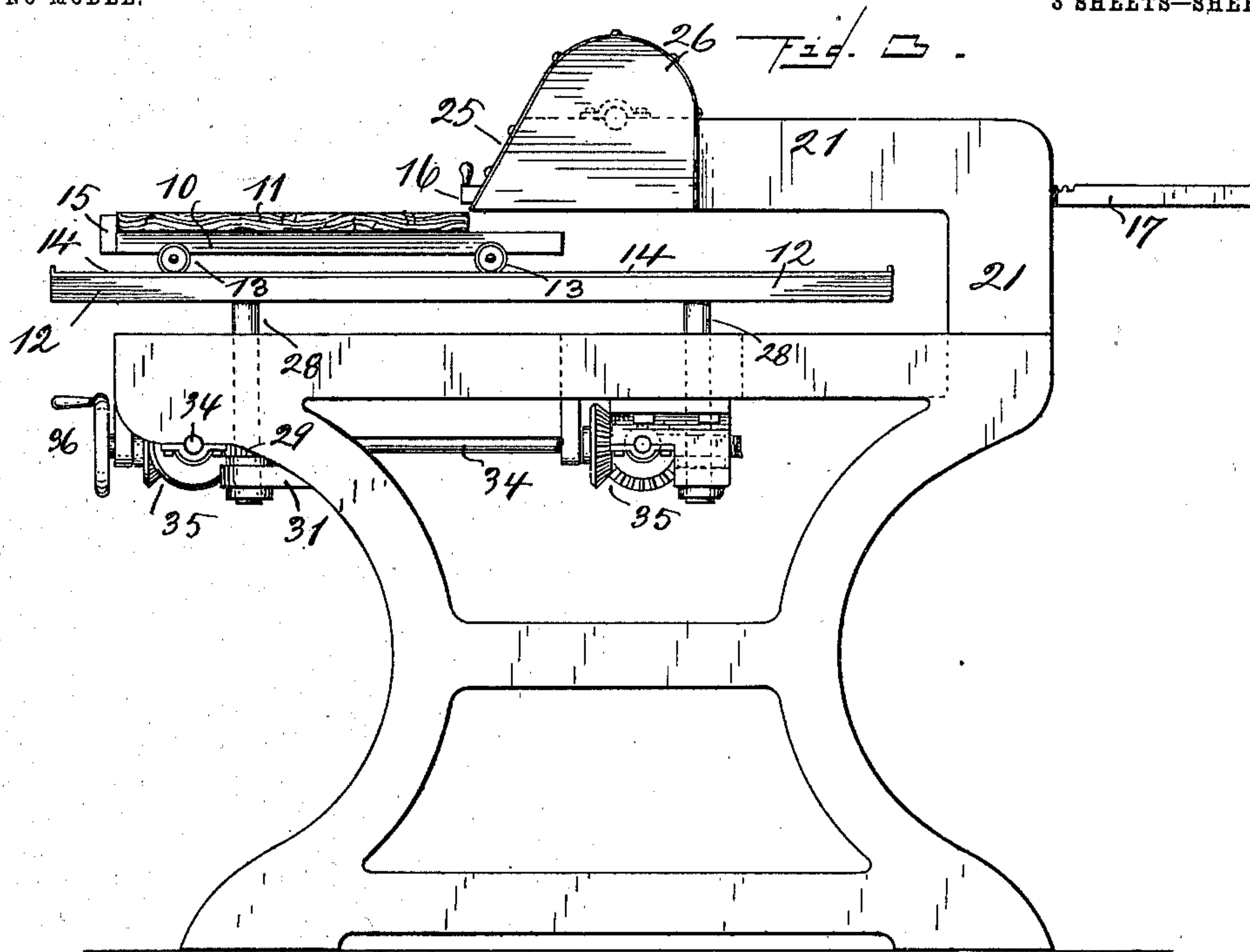
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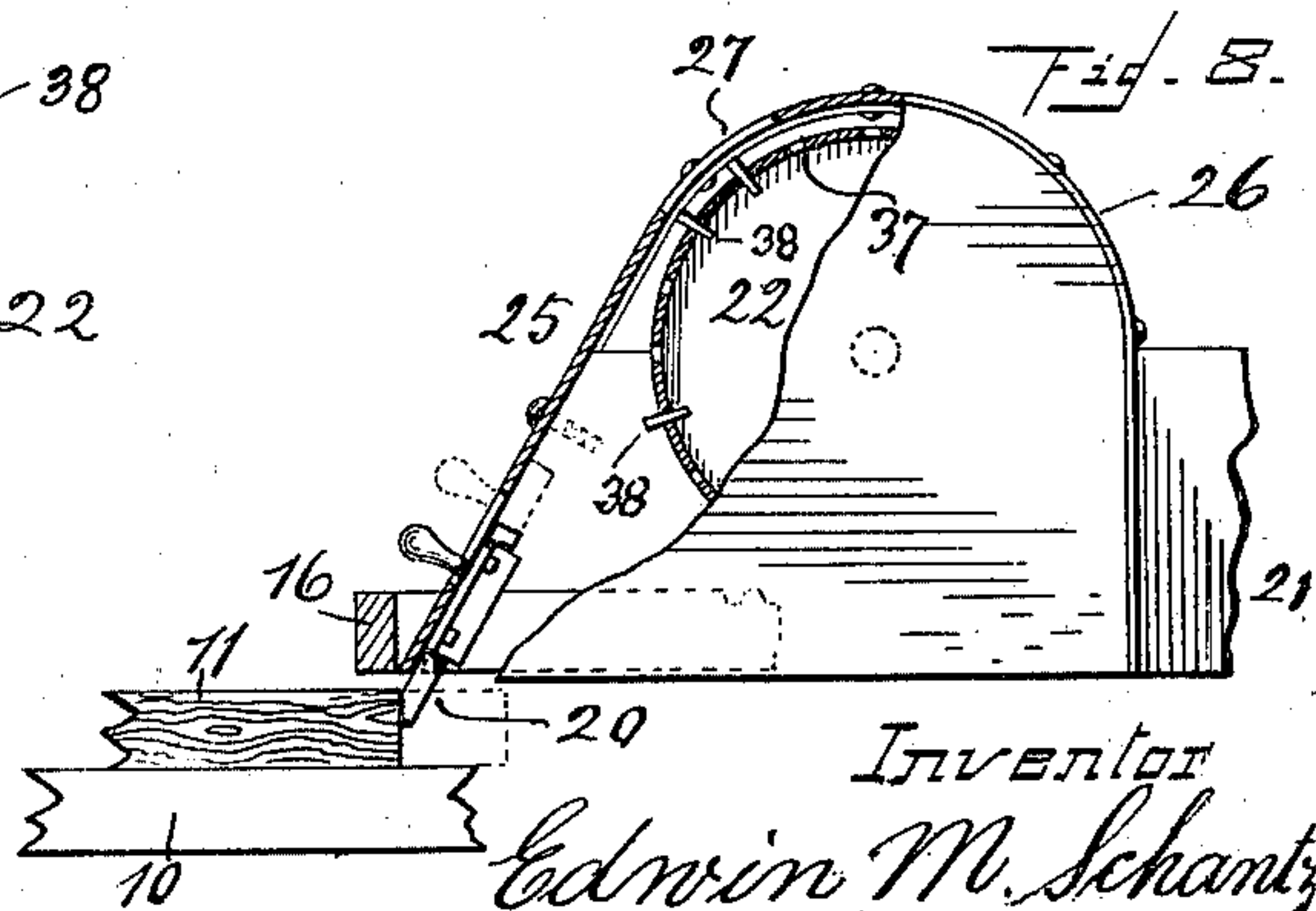
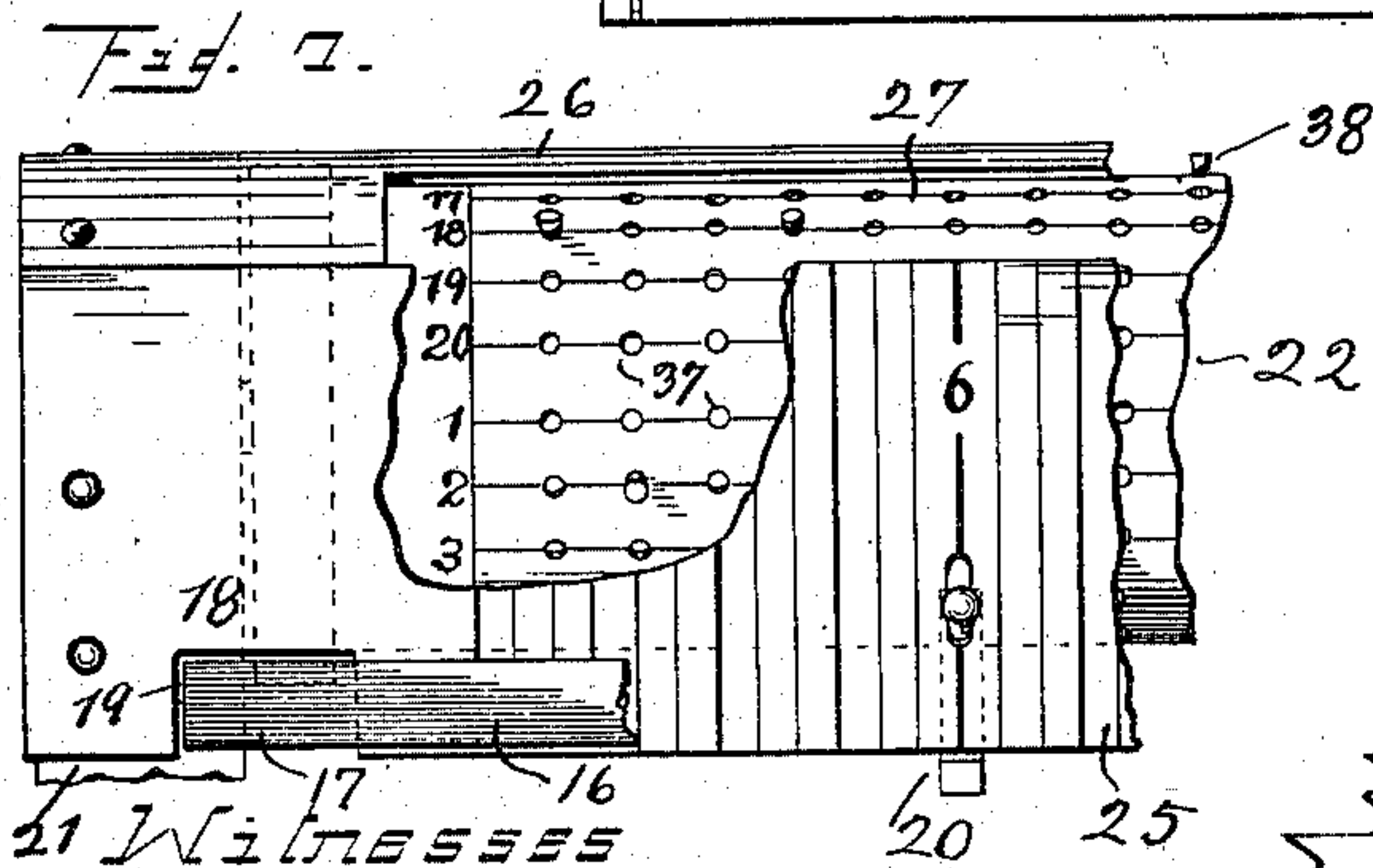
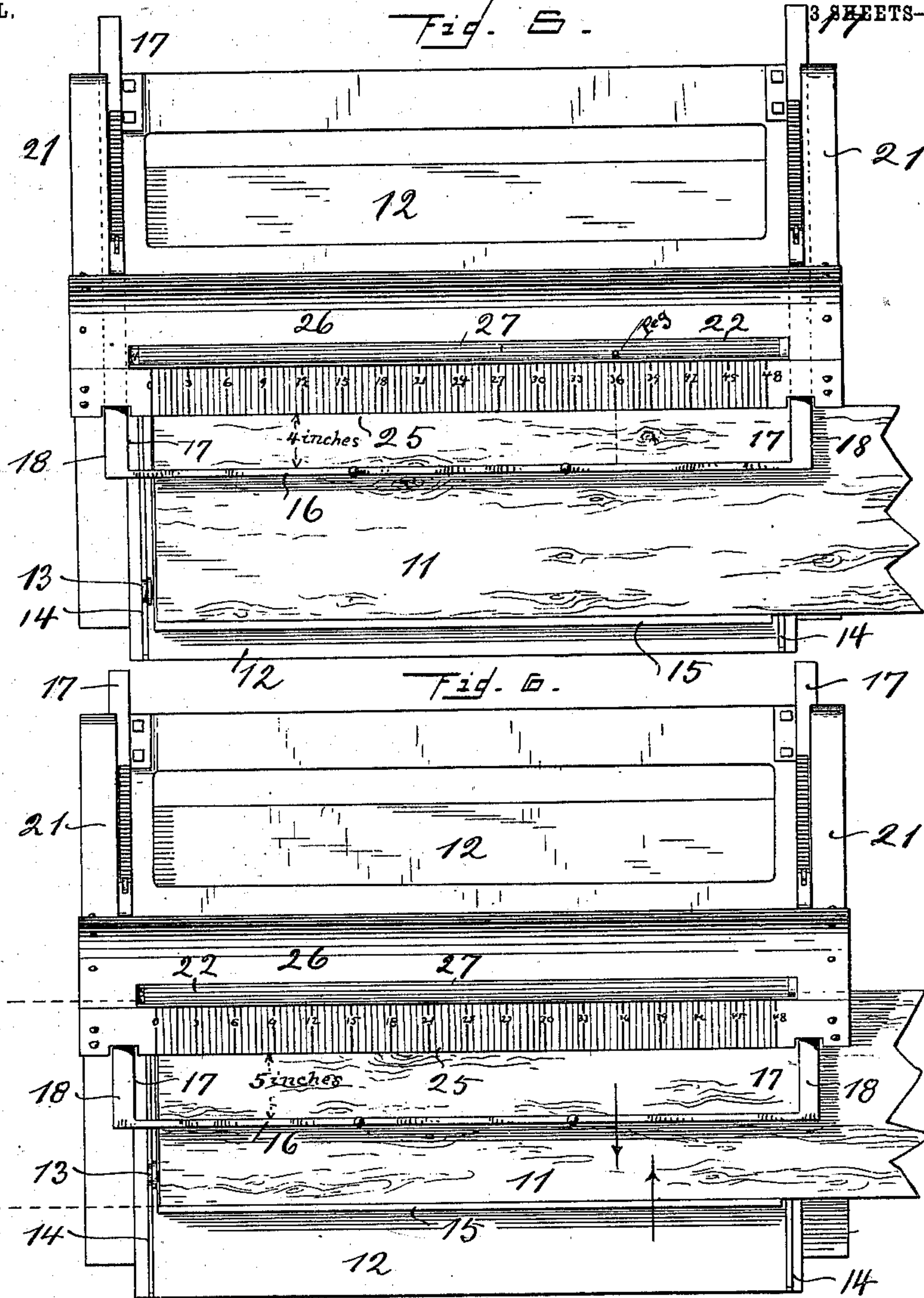
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3 SHEETS—SHEET 3.

Fig. E.



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# UNITED STATES PATENT OFFICE.

EDWIN M. SCHANTZ, OF ZIMMERMAN, OHIO.

## MARKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 734,755, dated July 28, 1903.

Application filed February 24, 1903. Serial No. 144,895. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN M. SCHANTZ, a citizen of the United States, residing at Zimmerman, Greene county, State of Ohio, have  
5 invented a certain new and useful Marking-Machine to be used, for instance, to mark lumber to be cut up subsequently into so-called "dimension stuff;" and I do declare the  
10 following to be a clear, full, and exact description thereof, attention being called to the accompanying three sheets of drawings, with the reference-numerals marked thereon, which form also a part of this specification.

This invention relates to a new and useful  
15 marking device, the object being to mark off for subsequent cutting rectangular pieces on larger pieces, which latter are to be divided in such smaller pieces or from which such smaller pieces are to be cut. At the same  
20 time the device shows the superficial dimensions—that is, length and width—of the surface so marked off.

The device consists substantially of a member which I call "marking-guide" and which  
25 serves to guide a suitable marking implement, which may be a pencil or piece of chalk, while the same, held in the hand, is moved over the surface to be marked off. There is also a measuring device operatively connected with  
30 the marking-guide in a manner that any change in the marking-guide from one position to another is immediately indicated in certain selected scale-units—as inches, for instance—so that the size of the piece so marked  
35 off may be at once ascertained.

As far as the operation of the entire device is concerned the material handled may be paper, pasteboard, leather, cloth, or wood. In the present case the device is intended for use  
40 on wood or lumber, which is to be cut up in smaller pieces of certain sizes or so-called "dimension-stuff," and which pieces are to be marked off by my device prior to such reduction.

The device may be used in two ways. One way to use it would be for marking pieces according to certain fixed sizes given and in which case the marking-guide would be set correspondingly to the size given and as indicated by the measuring device. In the  
50 other way the position of the marking-guide would be governed by other circumstances—

as, for instance, by the condition of the material, as to quality or defects in it, and where the marking-guide would be set with respect  
55 to these circumstances—while the matter of dimension would be a subject of subsequent consideration. Thus, for instance, in the more specific object for which this device has been designed and which is to mark off  
60 pieces free of defects—as, for instance, in lumber pieces clear of knot-holes—the marking-guide is first set and used, the size of the marked-off area being subsequently ascertained. The device has been constructed  
65 with a view to more particularly satisfy requirements for this last-mentioned manner of use, since the means and construction required in such case will also be available to fully serve when used in the other manner. 70

In the following specification, and particularly pointed out in the claims following, is found a full description of the invention, together with its manner of use, parts, and construction, which latter is also illustrated in  
75 the accompanying three sheets of drawings, in which—

Figure 1 is a front view of the device. Fig. 2 is a top view of the same. Fig. 3 is a side view of it. Fig. 4 is a vertical cross-section  
80 of the machine. Figs. 5 and 6, in views similar to Fig. 2, but at reduced scale, illustrate manner of using the device. Fig. 7, at enlarged scale, shows one end of the measuring-drum; and Fig. 8 is a cross-section thereof. 85

10 is a suitable table on which the material to be marked for subsequent subdivision is supported, the material being wood or lumber, and is indicated by 11. This table is supported on a base 12, on which it may be  
90 moved back and forth. This movement may be a sliding one, but is preferably on rollers 13, moving on tracks 14. Stops or a lip 15 projects up from this front edge of the table, against which the edge of the board 11 is  
95 placed, so as to have this latter supported parallel to its movement.

The most important marks to be put down as indicating lines for subsequent separation are those defining positions of lines of division or cuts in a longitudinal direction, since  
100 these lines are usually the longest. For marking these lines I use what may be called a "movable ruler," or, as before defined, a mark-



ing-guide, (indicated at 16,) and which is used to guide a pencil, piece of chalk, or other marking implement while held in the hand and passed along such ruler or guide. The same is supported in a manner that it may be moved or adjusted between the longitudinal edges of the board to be marked for subdivision, the support being such that said ruler or guide in all its positions or movements for adjustment is held strictly parallel to said longitudinal edges of the board or of lip 15. For such purpose it is provided with two rearwardly-extending branches or arms 17, each of which on its outer side has a flange 18, fitted into a guideway 19, cut in the inner sides of standards 21, one at each end of the machine.

Table 10 is supported at such a height that when a board is in position on it the same by means of the table may be shoved under said guide, or this latter may be pulled out over it, the two being vertically close to each other, so that the guide when pulled out over the board may be used in drawing the longitudinal division-lines. In order to define the distance between these or between the first one and the edge of the board, the marking-guide is operatively connected with a measuring device which, preferably in inches, indicates the distance between such longitudinal lines which, in other words, is equivalent to the width of the pieces marked off. This measuring device consists of a drum 22, having its face divided circumferentially by lines indicating inches or fractions thereof. The rotation of this drum is made dependent on the movement of ruler 16, for which purpose one, but preferably both, ends of this drum are provided with cog-wheels 23, which are engaged by toothed racks formed in the upper edges of arms 17. The drum and its cog-wheels are supported in standards 21. It will now be seen that the rotation of the drum is proportional to the movement of ruler 16, and therefore if this latter has been moved from its initial position (shown in Fig. 3) and to a position, say, about four inches farther out, as shown in Figs. 4 and 5 and in dotted lines in Fig. 2, a section of board four inches wide may be marked off for subsequent cutting, ruler 16 being used to run the division line and the measuring-drum will show four inches. For running the next line ruler 16 will have to be pushed into its initial position, whereby also the drum is returned to zero. Next the board is pushed forward until the line run previously is under the ruler in its initial position, (see Figs. 4 and 6,) after which the latter is pulled out again and another line is marked. Means may be provided for holding positively the marking-ruler while the division-line is run. I consider, however, that a mere frictional hold is sufficient and provide for such purpose friction-rollers 24, held against the teeth of arms 17 by yielding spring-pressure. These means prevent the rack and ruler from moving too freely and

assist the hand to hold this latter until the marking-line is run. For defining lengths of the pieces marked off thus as to width I provide a scale 25, divided so as to show the same graduations as the drum and the lower edge of which runs down close to the board to facilitate the marking of lengths as taken off from said scale and transferred onto the board. This lower edge also serves as a gage and defines the position into which one of the longitudinal edges of the board has to be placed at the beginning of operations. At that time this lower edge, the particular edge of the board, and the marking-guide 16, when in its normal position with the measuring-drum at zero, come all together, as shown in Figs. 1 and 3. This placing of the board may be aided by an adjustable stop 20. To mark these lengths no means are provided to guide the hand and marking implement, since the lines running across the width of the board, or a part of the width as marked off, are only of limited lengths and may be readily drawn by placing the pencil on the board opposite the particular graduation on scale 25 and running the line across. Furthermore, the devices on the saw-table, upon which such board is placed later on when ready to be cut up, will cause such cut to be straight after started at the proper place. However, in most cases one of the lines (the one at the left end) may be run aided by a guide, since the left one of arms 17 is available for such purpose.

To prevent confusion and to facilitate quick reading of the dimensions, as shown by the face of the drum, the larger part of this face is covered by an inclosure or hood 26, and for which inclosure scale 25 may serve as a part, a narrow slot or opening 27 being left for observation.

When the material handled is always of the same thickness, no vertical adjustment of any of the parts of the device is required and the boards may be supported at a fixed height with respect to the marking-guide above. Such is rarely the case, however, and it is therefore preferable to have a certain vertical adjustment to provide for the usual thicknesses of lumber and also for any irregularities caused, for instance, by warping, so that this upper surface of the board may always be brought close under the marking-guide, but permits a free operation of this latter over and across the board. This adjustment is obtained by supporting-base 12, which carries the lumber-table 10, in a manner to be vertically adjustable with reference to the marking and measuring device. Various mechanical contrivances may be used for such purpose. As shown, the under side of base 12 is provided with fixedly-attached screws 28 and supported by being seated in nuts 29, free to rotate in fixedly-located bearings 31. The outer edges of these nuts are constructed to form worm-wheels 32, all engaged by worms 33. By simultaneously rotating all these worms the nuts will act upon the screws



and, according to the direction of rotation, base 12 with the table and lumber on it will be either raised or lowered. For such simultaneous rotation of all the worms a system of shafting 34 and bevel-wheels 35 is used, the arrangement being readily understood and all of which are operated by a handle or hand-wheel 36. Bearings 31, which support the means on which base 12 rests, may form part of or rest on the general frame of the machine.

In the first manner of using the machine, where the marking-lines are to be placed according to certain sizes given, the marking-guide 16 is simply pulled out over the board until the figure on the drum appearing through observation-opening 27 shows the desired width. Thus assuming a piece were to be marked off to be subsequently sawed to a size four inches wide and thirty-six inches long, the board is placed in a position as shown in Figs. 2 and 3, one of its longitudinal edges resting against lip 15 while the other, by means of the adjustable-table, is caused to come right under the edge of scale 25, and the marking-edge of member 16 would be right above such edge and against scale 25. Drum 22 is at zero. The marking-guide is now pulled out until the drum indicates four inches, at which time the guide is in a position four inches from the edge of the board and as shown in Figs. 4 and 5 and in dotted lines in Fig. 2. To mark the length, the pencil is placed opposite the graduation showing thirty-six inches on the scale and a line is run over from this latter to meet the longitudinal line first marked. Assuming now another piece to be marked off five inches wide and the same or any other length, the board, by means of the movable table on which it rests and without changing the position thereon, is run ahead in and under the measuring-drum until the line first marked is even with scale 25. (See Figs. 4 and 6.) Marking-guide 16 is next manipulated until the drum shows five inches, (see Fig. 6,) which would mean that the marking-guide is in a position where another longitudinal marking-line may be run five inches away from the line run first. In the other manner of using my machine the position of marking-guide 16 is determined with regard to the condition of the material to be marked off and as to the position of any possible defects in the surface thereof. Thus in the more special use for which this device is designed the marking-guide is primarily placed with regard to the position of knot-holes, for instance, and therefore instead of moving the guide out a certain fixed distance as measured off and indicated by the drum the operator pays no attention to the drum at all, but moves the guide out as far as it will give him a piece of lumber free from knots. (See position of knot-hole in Fig. 5.) He may now mark the line down. For marking the next piece he proceeds as described before and shown in Fig. 6—that is, the board supported on table 10 is rolled

in first to the previously-marked line before the next line is run, with the exception, however, that if the defective portion is not to be made use of a new line is run first on the other side of the defect or knot-hole, so that this latter comes between two lines, which material is to be wasted, and the width of the next piece is then taken from this new line. Thus while in the first instance the operator pays no attention to sizes at all and merely places the marking-guide with regard to defects he nevertheless considers the size after that, especially as to length—that is, he runs the marking-line defining length according to a size which he can best make use of. In order to show these sizes to the operator at a glance without requiring him to consult figures or lists, &c., the graduations on the face of the drum have sockets 37 spaced apart an inch, more or less, as may be best suited for the purpose, and pegs 38 are provided to be received by them. Before beginning operations on a day's work the drum, aided by these devices, is prepared for reading by the operator—say, for instance, at three inches wide pieces are wanted eighteen and thirty inches long, in which case pegs would be inserted in the sockets opposite eighteen and thirty, as shown by scale 25 and with the graduation showing three inches on drum 22.

If pieces are wanted four inches wide and thirty-six inches long, a peg is placed in the particular socket, and so on until the entire face of the drum is more or less filled up. The operator now in manipulating marking-guide 16 pays attention to the knot-holes, but also watches for pegs to appear in the observation-opening 27, and therefore, while he places said guide to clear defects, he also places it to the most practical advantage with regard to sizes wanted and as they are indicated by the pegs appearing in the observation-opening. After these preliminaries are all considered he finally marks length as indicated by the peg with reference to scale 25.

While this description indicates the uses in general outline merely, it is not possible, considering the many possibilities and contingencies arising from location of defects and combination of sizes, to explain all the possible uses to which the device may be put; but it may be added in general that subject to the size-limits of the machine the possibilities of use are practically endless and provide for all possible results which may be expected from such a machine.

Reversions of position and motion are possible without departing from the operative principle of the device. For instance, instead of adjusting the position of the board with reference to the marking and measuring device the same may remain stationary and these latter parts might be moved horizontally or vertically.

Stops 20 are particularly useful when the edges of the board are not parallel, in which case the first or advancing edge, which must



be parallel to the drum and measuring-guide, is placed against these stops. After once placed these stops are moved out of the way, the board by reason of its weight readily remaining in position. In such case lip 15 is of no practical use.

Having described my invention, I claim as new—

1. In a marking-machine, the combination of a marking-guide adjustably supported, a support for the material to be marked, a measuring-drum supported in a fixed position having circumferentially - arranged graduations intended to indicate width, a scale supported parallel thereto having graduations to indicate lengths and operative connection between the marking-guide and the measuring-drum whereby changes in position of the former are measurably indicated by this latter.

2. In a marking-machine, the combination of a marking-guide adjustably supported, a support for the material to be marked, a measuring-drum having circumferentially - arranged graduations intended to indicate width, the divisional lines of such graduations arranged so as to extend longitudinally over the entire face of the drum, a scale supported parallel to this latter and provided with graduations intended to indicate length, rows of peg-sockets in the face of the drum arranged parallel to the divisional lines thereon and spaced to correspond to the graduations in the scale mentioned, removable pegs for these sockets and operative connection between the marking-guide and the measuring-drum whereby changes in position of the former are measurably indicated by this latter.

3. In a marking device, the combination of the support for the material to be marked, a marking-guide having a rearwardly-extending arm at each of its ends and a frame in which these arms are supported in a manner to have a sliding adjustment which permits the marking-guide to be moved back and

forth, said frame being arranged above the support for the material with a clear space between the two, so that during this movement the marking-guide and its arms may move above the material leaving this latter free to be adjusted for marking under the marking-guide and its arms.

4. In a marking-machine, the combination of a support for the material to be marked, a marking-guide having a rearwardly-extending arm at each of its ends, a frame in which these arms are supported in a manner to have a sliding adjustment which permits the marking-guide to be moved back and forth above the material, a measuring-drum supported parallel to the marking-guide, cog-wheels at its ends and racks formed in the arms mentioned, which by engaging the cog-wheels of the drum cause a rotation of this latter proportionate to the movement of the marking-guide.

5. In a marking-machine, the combination of a support for the material to be marked, a marking-guide having a rearwardly-extending arm at each of its ends, a standard for each of these arms in which they are supported in a manner to permit the marking-guide to be adjusted above the material to be marked, a measuring-drum having longitudinal graduations on its face, bearings for this drum and whereby it is supported parallel to the marking-guide, operative connection between the arms of the marking-guide and the drum whereby movement of the former causes a proportionate rotation of this latter, an inclosure for this drum and an observation-opening in said inclosure.

In testimony whereof I hereunto set my signature in the presence of two witnesses.

EDWIN M. SCHANTZ.

Witnesses:

C. SPENGEL,  
ARTHUR KLINE.